

NEW

PATENT

AMENDMENT A (PRELIMINARY)

SPECIFICATION AMENDMENTS

At page 1, lines 1-2, please amend the Title as follows:

~~MICROPROCESSOR WITH HARDWARE CONTROLLED POWER~~  
MANAGEMENT INSTRUCTION-INITIATED METHOD FOR SUSPENDING  
OPERATION OF A PIPELINED DATA PROCESSOR

At page 1, between lines 2 and 3, please insert the following:

RELATED APPLICATIONS

This is a division of U.S. patent application no. 10/216,615, filed August 9,  
2002.

At page 1, lines 4-6, please amend the text of the section entitled "Technical Field of the Invention" as follows:

This invention relates in general to integrated circuits, and more particularly to a ~~microprocessor having hardware controlled pipelined data processor with power management control.~~

At page 4, lines 3-21, please amend the text of the section entitled "Summary of the Invention" as follows:

~~—In accordance with the present invention, a method and apparatus is provided which provides significant advantages in reducing the power consumption of a microprocessor.~~

~~—In the present invention, a processing unit includes a plurality of subcircuits and circuitry for generating a clock signal thereto. Circuitry is provided for detecting the assertion of a control signal; responsive to the control signal, disabling circuitry disables the clock signal to one or more of the subcircuits.~~

~~\_\_\_\_\_ The present invention provides significant advantages over the prior art. A significant reduction in the power consumed by a computer may be effected by disabling the clock to the microprocessor circuitry. The present invention allows the disabling and enabling of the microprocessor clock signals to be controlled by a single control signal. Further, an acknowledge signal may be provided to notify external circuitry of the suspended state of the microprocessor.~~

\_\_\_\_\_ In accordance with the presently claimed invention, an instruction-initiated method for suspending operation of a pipelined data processor is provided by selectively disabling a clock signal to pipeline subcircuitry in response to an instruction executed by the pipeline subcircuitry.

\_\_\_\_\_ In accordance with one embodiment of the presently claimed invention, a method for suspending operation of a pipelined data processor to reduce power consumption includes:

\_\_\_\_\_ receiving an enabled first clock signal;

\_\_\_\_\_ receiving one or more data processing instructions with a first portion of a pipeline subcircuit;

\_\_\_\_\_ executing the one or more data processing instructions with a second portion of the pipeline subcircuit subsequent to the first pipeline subcircuit portion in response to the enabled first clock signal; and

\_\_\_\_\_ receiving an operation suspension instruction with the first pipeline subcircuit portion and in response thereto

\_\_\_\_\_ asserting one or more control signals from the pipeline subcircuit, followed by

\_\_\_\_\_ disabling the first clock signal.

\_\_\_\_\_ In accordance with another embodiment of the presently claimed invention, a method for suspending operation of a pipelined data processor to reduce power consumption includes:

\_\_\_\_\_ receiving an enabled first clock signal;

\_\_\_\_\_ receiving one or more data processing instructions with a first portion of a

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pipeline subcircuit;

executing the one or more data processing instructions with a second portion of the pipeline subcircuit subsequent to the first pipeline subcircuit portion in response to the enabled first clock signal; and

receiving an operation suspension instruction with the first pipeline subcircuit portion and in response thereto

asserting one or more control signals from the first pipeline subcircuit portion, followed by

disabling the first clock signal.

At page 19, lines 3-8, please amend the text of the section entitled "Abstract of the Disclosure" as follows:

~~A processing unit includes a plurality of subcircuits and circuitry for generating clock signals thereto. Detection circuitry detects the assertion of a control signal and disabling circuitry is operable to disable the clock signals to one or more of the subcircuits responsive to the control signal. An instruction-initiated method for suspending operation of a pipelined data processor by selectively disabling a clock signal to pipeline subcircuitry in response to an instruction executed by the pipeline subcircuitry.~~